

Prevention Tips: Preventing Biceps Tendon Tears

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Biceps tendon tears can happen at the shoulder or elbow levels and most commonly occur in one of the following three ways:

- 1) With trauma, such as falling onto an outstretched hand.
- 2) Degeneration over time and/or with overuse. These types of tears occur under normal, ordinary forces or even occur without us knowing it.
- 3) Combination of a degenerative tendon and a high force. This type of tear occurs when something heavy is involved – such as a heavy lift, and the tendon fails under the pressure.

Symptoms of a bicep tendon tear may include some of the following: a sudden, sharp pain in the upper arm or the front of the elbow; weakness in the shoulder and elbow; bruising; tenderness; cramping; an audible “snap”; and/or bulging in the upper arm (“Popeye Muscle”). A person experiencing any of these symptoms should consult with their first aid/health team or onsite therapist.

Because biceps tendon tears are (usually) consequent to a load superimposed on pathologic (diseased) degenerative tissue, prevention is to some degree unavoidable.¹ While it may not be possible to completely prevent tendon tears, it is important to understand that steps can be taken to help reduce the risk. The primary risk factors are related to age, ergonomics and lifestyle habits/fitness.

What increases the risk for a biceps tendon tear?	Potential solutions
Age 40-60 The age range of people most likely to sustain a torn biceps muscle ² . Degenerative changes are almost always associated with tendon rupture ³	Age is an unavoidable risk factor – awareness of age as a risk factor is key.
Heavy laborers, especially in middle age ⁴	Age is an unavoidable risk factor – awareness of age as a risk factor is key.
Overhead activities ⁵	Limit overhead activities (especially heavy overhead activities) and avoid altogether when possible
Those with poor physical conditioning (strength and flexibility) ⁶	<ul style="list-style-type: none"> • Incentives for fitness • “Spring training” before the annual outage • Strengthen the muscle to which the tendon is attached. • Maintenance of appropriate conditioning by improving efficiency of motion and strengthening which will enhance the health and resilience of the tendon: <ul style="list-style-type: none"> ○ Shoulder and elbow flexibility ○ Muscle strength and endurance ○ Cardiovascular fitness

Inadequate warm-up ⁷ before heavy exertion	<ul style="list-style-type: none"> Perform a dynamic warm-up before activity.
Continuing to work when fatigued ⁸	<ul style="list-style-type: none"> Avoid prolonged awkward positions, or long duration, highly fatiguing holds. Allowing sufficient time for adequate rest and recovery between shifts and between jobs involving high demand on the upper extremities Learning to back off from activities if fatigued or not used to the activity. Schedule lighter tasks later in the day Encourage employees to report to their supervisor when they feel they cannot continue without potentially causing injury
Overloading the biceps ⁹	<ul style="list-style-type: none"> Educate regarding strengthening upper back/shoulder girdle. Perform eccentric strength training to increase the tendon's strength against its load.
Failure to listen to the body's warning signs ^{10 11}	Educate employees to report pain/discomfort early
Improper lifting or working techniques ¹²	<ul style="list-style-type: none"> Educate in use of proper technique such as lifting with elbows straight or nearly straight. Utilize job coaching, ergonomic assessments with recommendations and employee/supervisor education and training in risk factors to minimize risks related to improper lifting or working techniques.
Manual performance of tasks that could be performed with a power tool or equipment	Make power tools readily available and encourage use of power tools whenever possible
Getting fewer than 7 hours of sleep per night may increase injury risk. ¹³	Sleep at least 7 hours per night
Use of tobacco in any form ¹⁴	Provide incentives for quitting tobacco and remaining tobacco free
Excessive antibiotics use prior to a tear will result in weakening of the tissue in some individuals. ¹⁵	Fluoro quinolones, such as Cipro, are commonly associated with tendon tears. This potential side effect should be taken into consideration when you and your doctor are choosing an antibiotic.
Dehydration ^{16 17}	Encourage increased water intake
Using NSAIDs (non-steroidal anti-inflammatory drugs) such as ibuprofen, aspirin or naproxen will result in additional damage to any chronic tendon problem. They do this by removing the sulfur necessary for the collagen formation associated with tendon repair. ¹⁸	<ul style="list-style-type: none"> Avoid long-term use of NSAIDs. The increase of various foods such as onions, garlic and other foods high in sulfur such as raw fruits and vegetables will aid in tendon tear prevention.

References:

- ¹ <https://www.moveforwardpt.com/SymptomsConditionsDetail.aspx?cid=a97cf498-c31a-4f0d-b4c2-3f5bdbcebba2><https://orthoinfo.aaos.org/en/diseases--conditions/biceps-tendon-tear-at-the-shoulder/>
- ² <http://www.coreperformance.com/knowledge/injury-pain/the-complete-guide-to-torn-biceps.html>
- ³ <https://www.moveforwardpt.com/SymptomsConditionsDetail.aspx?cid=a97cf498-c31a-4f0d-b4c2-3f5bdbcebba2>
- ⁴ [ibid](#)
- ⁵ [ibid](#)
- ⁶ [ibid](#)
- ⁷ [ibid](#)
- ⁸ <http://fitnesspainfree.com/bicep-tendon-tears-injury-prevention-for-strongman-part-2/>
- ⁹ [ibid](#)
- ¹⁰ <http://achillestendon.com/preventing-injuries/>
- ¹¹ <http://www.thirdage.com/hc/c/tendinopathy-prevention>
- ¹² <http://fitnesspainfree.com/bicep-tendon-tears-bicep-tear-injury-prevention-for-strongman-part-1/>
- ¹³ <http://fitnesspainfree.com/bicep-tendon-tears-injury-prevention-for-strongman-part-2/>
- ¹⁴ Cigarette smoking is also a strong risk factor for distal biceps tendon rupture. Indeed, smokers have a 7.5 times greater risk of distal biceps tendon rupture compared to non smokers⁴⁶, and patients who sustain bilateral distal biceps tendon ruptures are usually middle-aged men with higher rates of nicotine and anabolic steroid use than the general population⁴⁷. From <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3711704/>
- ¹⁵ <http://www.bodybuilding.com/fun/drryan51.htm>
- ¹⁶ "Tendons stay strong and elastic with good circulation, nutrition, hydration, exercise and rest."
<http://gainesvillemassagetherapy.com/articles-about-therapeutic-massage/how-massage-therapy-can-help-tendinitis-and-tendinosis/>
- ¹⁷ http://www.ehow.com/facts_5886538_effect-squatting-achilles-tendon.html
- ¹⁸ <http://www.bodybuilding.com/fun/drryan51.htm>

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